

ESSENTIAL ELEMENTS FOR THE DEVELOPMENT OF THE FINANCIAL MARKET IN SERBIA

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Abstract: This paper represents the analysis of various financial instruments that should be available in the financial market of the Republic of Serbia and enable its faster economic development. These include financial derivatives such as options, futures, and swaps, as well as a new generation of derivative instruments like exotic options. The growth of a nation's economy is assessed, in part, by the progress of its financial market, which is made up of various segments. The financial market is a crucial aspect of a country's economic growth, offering vital investment opportunities for investors. One key segment within this market is the financial derivatives market, which involves trading financial derivatives both on organized exchanges and in the OTC market. The advancement of this market segment is essential for mitigating or eliminating business risks and securing investments, thereby making it more attractive to investors.

Key words: financial instruments, financial markets, financial derivatives, digital options

1. INTRODUCTION

The subject of this paper is the analysis of various financial instruments that should be available in the financial market of the Republic of Serbia. These include financial derivatives such as options, futures, and swaps, as well as a new generation of derivative instruments like exotic options. Exotic options have experienced significant growth in trading over recent decades. They are characterized by non-standard execution conditions, payment mechanisms, underlying assets, and execution prices [1]. Any options that are not standard stock contracts (vanilla options) are referred to as exotic options, also known as special or non-standard options [2].

The financial market is a crucial aspect of a country's economic growth, offering vital investment opportunities for investors. One key segment within this market is the financial derivatives market, which involves trading financial derivatives both on organized exchanges and in the OTC market. The advancement of this market segment is essential for mitigating or eliminating business risks and securing investments, thereby making it more attractive to investors.

A new type of financial derivatives that has significant use in the global market are the next generation of options called exotic options. Exotic options primarily aim to manage and protect against risks by trading these risks in the market (currency risk, risk of changes in raw material prices, etc.). These financial instruments operate on the principle of bid and ask for risk. They play a significant role by enabling investors to gain a deeper understanding of potential risks and eliminate undesirable ones [3]. In order for the exotic options market to function, there must be a demand for risk, that is, there must be participants who are ready to take the risk upon themselves for a certain fee. On the other hand, there must also be an offer of risk in the form of participants who want to reduce business risks (hedge) and pay a certain amount for it. As for the exotic options market, market makers are large commercial banks that create these financial instruments and find interested participants.

2. ANALYSIS OF FINANCIAL MARKET IN REPUBLIC OF SERBIA

Due to unfavorable historical circumstances that marginalized Serbian economy, financial market was not developed in accordance with global trends, which turned out to be a huge mistake. The Serbian economy lacks financial market institutions and instruments that would enable its normal operations and development. American researchers highlight that developing countries with more advanced financial markets tend to achieve better outcomes and more stable economic growth than those that have either neglected or underdeveloped financial markets and instruments. Serbia's financial market, in particular, lacks derivatives trading, which could significantly boost its development and increase trade volume. [4].

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Despite the aforementioned points, Serbia has established a regulatory and institutional framework that supports trading in all types of financial derivatives. The basis of the regulatory framework is the Capital Market Law [5], which, among other things, defines financial derivatives as financial instruments, including the following types of derivative instruments:

- options,
- futures,
- swaps,
- interest forwards,
- derivative financial instruments for the transfer of credit risk,
- other derivative financial instruments.

The Capital Market Law defines the rules and way of organizing places for trading derivatives (stock exchanges) and over-the-counter (OTC) instruments. In addition, trading in financial derivatives is prescribed by the Law on Foreign Exchange Operations [6], [7] and the decisions of the National Bank of Serbia (NBS) [8]-[11]. In accordance with the decision of the NBS on conducting operations with financial derivatives, banks can conduct operations with financial derivatives with another bank, resident and non-resident.

The demand for financial derivatives certainly exists among domestic business entities that operate in the global market in order to protect themselves from the risks prevailing in the world market. The state requires these instruments due to its large international debt, commercial banks, and companies operating abroad. One of the biggest users of financial derivatives in Serbia is the State institutions. The Report of the Public Debt Administration shows that the state uses cross-currency swaps for hedging Eurobonds[12]. Contracts were concluded with the world's largest banks such as Bank of America, BNP Paribas, Citigroup, Deutsche Bank AG, J.P. Morgan, Merrill Lynch, etc. Part of the signed contracts can be seen in the following table:

Table 1. Records of realized transactions with financial derivatives

Source: Uprava za javni dug; <https://javnidug.gov.rs/rsc/finderivat>

Subject of the hedging	Date of transaction	Type of instrument	Value in USD	Date of maturity	Contracting party
EUROBOND 2034	05.06.2024	Cross currency swap (CCS)	450.000.000	12.06.2034	Deutsche Bank AG
EUROBOND 2034	05.06.2024	Cross currency swap (CCS)	450.000.000	12.06.2034	Bank of America
EUROBOND 2034	05.06.2024	Cross currency swap (CCS)	300.000.000	12.06.2034	BNP Paribas
EUROBOND 2034	05.06.2024	Cross currency swap (CCS)	300.000.000	12.06.2034	MUFG Securities (Europe) N.V.
EUROBOND 2028	19.01.2023	Cross currency swap (CCS)	300.000.000	26.05.2028	Citigroup Global Markets
EUROBOND 2028	19.01.2023	Cross currency swap (CCS)	300.000.000	26.05.2028	J.P. Morgan Securities plc
EUROBOND 2028	19.01.2023	Cross currency swap (CCS)	50.000.000	26.05.2028	Merrill Lynch International

In accordance with the above, in the Republic of Serbia, the institutional framework for trading in financial derivatives and exotic options represents the Belgrade Stock Exchange and commercial banks. At the moment, only shares and bonds are traded at the Belgrade Stock Exchange. There is no

trading of standardized financial derivatives such as stock options and futures. Regardless, the stock exchange foresees trading in derivatives and other financial instruments [13]. Based on this, it can be concluded that, in general, the market of financial derivatives in the Republic of Serbia is underdeveloped, while trading in the new generation of options does not exist.

In the Republic of Serbia, however, there is a supply of financial derivatives in the form of the over-the-counter (OTC) market represented by commercial banks. Financial derivatives are offered only by commercial banks (mainly the largest foreign banks operating in the Republic of Serbia) in the form of currency forwards and swaps. This market cannot be said to be of greater importance, because there is no data that a larger number of clients use the aforementioned contracts with banks.

The financial market in the Republic of Serbia is still in the development phase, because important elements that exist in developed global financial markets are missing. One of the essential elements that is missing is the trading of basic and advanced financial derivatives on organized exchanges or over-the-counter markets. Increasing integration into the global financial market will require the application of new and modern financial techniques and instruments. Considering that Serbia's financial market is integrated into the global financial market, exotic options serve as a tool to integrate our economy into international economic activities. They offer the ability to control and manage business risks, as well as provide opportunities for hedging against those risks. The application of modern financial instruments for risk management would enable domestic business entities to enter into business ventures more freely, which would have a favorable effect on the entire economy and its development. The possibility offered by exotic options, adaptation to the individual needs of business entities is very important when applying in our conditions, where the risk and uncertainty of business is very high [4].

3. PROSPECTS FOR IMPROVEMENT OF THE FINANCIAL MARKET

In order to develop and improve the financial market in the Republic of Serbia, it is necessary to introduce trade in all types of financial derivatives. It is also important to provide modern instruments in the form of a new generation of options, which are also called exotic options. One type of exotic option is Payout modified options [14].

Payout modified options use a different payment method than standard (vanilla) options [15]. Instead of the usual difference between the exercise price and the asset price at maturity, these options may result in no payout at all. This type of option features a sudden change and rapid adjustment in the payment method [18]. This group includes following type of options:

1. Digital or binary options,
2. Contingent premium options,
3. Power options.

3.1. Digital Options

Digital or binary options [16] are modern financial options that have a binary method of payment, they pay or do not pay a contractual fixed amount depending on whether the payment condition is met. payout a certain amount or nothing. Besides these two, there are no other possibilities.

This means that depending on the movement of the price of the underlying asset, the owner receives nothing, or receives a predetermined amount. There is no outcome between the two. These options have a discontinuous payout. They are easy to value, but difficult to hedge because the changes in the value of the option are very sudden [17].

They are used independently or in combination with other exotic options [18]. Also, the digital options mechanism is the basis for contingent premium options. Depending on how much they are affected by the price movement of the underlying asset, we can divide them into [19]:

- digital options independent of the path of the price of the underlying asset and

- digital options dependent on the price path of the underlying asset.

According to the method of payment, there are several types of these options, the most important of which are:

- standard or all or nothing digital options,
- one touch and double one touch digital options,
- no touch and double no touch digital options.

Digital options are suitable for investors who believe that the market price of the underlying asset will be above or below a certain level (with the possibility of this movement being limited) at a certain time. Digital options are cheaper than regular options. The structure they offer is particularly useful for issuers, for whom the way in which the payout occurs means a known and limited loss in case the option is exercised [20]. For customers, the advantage is that the payout is a known constant. The payment mechanism of digital options overcomes the problem faced by buyers of ordinary options when the price of the underlying asset ends up slightly above the strike price and the profit realized is not enough to cover the cost of the premium paid. Digital options are most often traded on the OTC market. They are traded by large financial institutions, hedge funds, companies and other professional investors. They are widely used in commodity, currency and interest rate markets. Indexes, the inflation rate, and various events such as the weather appear as basic assets [17].

3.2. Contingent Premium Options

Contingent premium options are options where the buyer does not pay a premium at the beginning. The premium is paid upon maturity of the option and only if the condition that the option is in the money is met. If the option ends up out of the money, the buyer will not pay the premium, that is, the seller of the option will not receive anything. Therefore, the premium paid for these options is significantly higher than the premium for ordinary options. The amount of the premium is determined when concluding the optional contract. They are also called cash on delivery, pay later options or zero premium options [21]. They originated on commodity exchanges and became very popular among investors who traded on the Nikkei 225 index.

Contingent premium options, in which the buyer does not pay the premium in advance, but the payment of the premium is conditioned by whether the option is in the money or not. The premium for contingent options is higher than the premium for ordinary options. This option is not entirely risk-free as it can be in the money at maturity, but with a payout that is less than the premium that must be paid. These options can be significant for a client who currently has no funds but is working on a project from which he expects a significant profit. In addition, these options effectively preserve their market value, i.e. resist the option's value declining over time. They are also less sensitive to changes in volatility than standard options.

When buying contingent premium options, the buyer estimates that the price of the underlying asset at maturity will be well below or above the exercise price [22]. With a contingent call or put option, at the moment when the price of the underlying asset equals the price of execution, the payment function has a discontinuity. After that, in the case of a contingent call option, the payout increases in proportion to the increase in the price of the underlying asset. With a contingent put option, the opposite is true. The payout increases as the price of the underlying asset falls.

Contingent premium options are very attractive because option buyers do not want to pay a premium in case the option has no payoff. Contingent options allow just that by allowing the buyer to borrow the premium. The basic risk for the buyer is that the price of the underlying asset will not rise enough relative to the strike price to cover the cost of the premium. These options are often used in the stock, currency and interest rate markets as a form of insurance against unwanted price movements during periods of high volatility.

3.3. Power Options

Power options are characterized by a non-linear, modified payoff function, so that the payoff increases by defining the exponent [1]. With an ordinary option, the payoff is a linear function of the difference between the price of the underlying asset and the exercise price if it is a call option and the opposite with a put option. The payoff function of power options has been modified so that the payoff is increased by defining the exponent [23]. According to the method of payment, they can be divided into two groups:

- symmetrical and
- asymmetrical.

Symmetric power options have a payoff function that is defined in the case of a call option as the difference between the price of the underlying asset at maturity and the exercise price raised to the power. With put options, the payoff function is the difference between the exercise price and the price of the underlying asset at the end raised to the power. In the case of asymmetric power options, power is applied separately to the price of the underlying asset, and separately to the exercise price. With call symmetric options on the power of the payoff function, the difference between the price of the underlying asset at maturity and the exercise price is raised to the power, while with put options the payoff function is the difference between the exercise price and the price of the underlying asset at the end raised to the power.

The power options mechanism allows the buyer to profit in markets where there are no large price swings of the underlying asset while reducing risk. In practice, these options often have an upper limit on the payout to reduce the risk to the option issuer. Due to the mentioned features, they are more expensive than ordinary options.

4. CONCLUSION

The key conclusion from this paper is that exotic options, a new generation of financial instruments for risk management, play a crucial role in attracting and boosting both foreign and domestic investments. They offer insurance against various business risks. The practical result is reflected in definition of solutions for Serbian companies that face daily currency and other risks, which hinder their operations and investment potential. The proposed solution involves using customized payoff options to eliminate currency risks based on each company's specific needs. This approach would allow Serbian companies to operate internationally without the stress of currency market fluctuations, ensuring more secure profits from their business activities.

Even without the previously mentioned reason, implementing exotic options in our country would enable businesses to engage more freely in ventures, positively impacting the overall economy and its growth. The flexibility of exotic options to meet the specific needs of businesses is crucial in our high-risk, uncertain environment. Typically, the cost of risk management with exotic options is lower than with standard options, which may offer either too much or too little risk coverage for businesses. Serbia's financial market lacks derivatives trading, which could further stimulate its development and increase trade volume. Additionally, this would attract more market participants, thereby enhancing liquidity.

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